Title

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Journal

Urology Practice, 6(6)

ISSN

2352-0779

Authors

Baradaran, Nima
Cedars, Benjamin
Cohen, Andrew J
et al.

Publication Date

2019-11-01

DOI

10.1097/upj.0000000000000043

Peer reviewed

UROLOGYPRACTICE

www.auajournals.org/journal/urpr

the Specialty

Attributes of Society of Genitourinary Reconstructive Surgeons Fellows and Early Career Trajectory of the Recent Graduates

Nima Baradaran,* Benjamin Cedars, Andrew J. Cohen, Jill C. Buckley, Kurt A. McCammon, Keith Rourke and Benjamin N. Breyer

From the Department of Urology, The Ohio State University Wexner Medical Center, Columbus, Ohio (NB), Department of Urology (BC, AJC, BNB) and Department of Biostatistics and Epidemiology (BNB), University of California San Francisco, San Francisco, and Department of Urology, University of California San Diego, San Diego (JCB), California, Department of Urology, Eastern Virginia Medical School, Virginia Beach, Virginia (KAM), and Division of Urology, University of Alberta, Alberta, Canada (KR)

Abstract

Introduction: We identified the attributes that the Society of Genitourinary Reconstructive Surgeons (GURS) fellowship directors prioritize in applicants. The secondary objective was to study the early career trajectory of recent GURS fellowship graduates.

Methods: GURS fellowship directors and fellows from 2014 to 2018 were surveyed electronically using Qualtrics® software. We asked fellowship directors to rate 12 items for their importance in match selection on a Likert scale. Fellows were prompted for details of practice size, case mix and research time. We assessed research productivity based on published articles on PubMed® and Google Scholar™. Findings were summarized with descriptive statistics and continuous variables were reported as median with interquartile range.

Results: Fellowship directors (90% response rate) rated subjective personal qualities as more important compared to more objective measures and achievements. Personality (5, 5-5), overall interview performance (5, 4-5) and letters of recommendation (5, 4-5) were most important. About 4 papers were published during fellowship per fellow. However, research productivity did not persist during early career. Upon graduation the majority of graduates were the only reconstructionist at their practice, with approximately 40% of their operative time dedicated to such cases. While we identified a variety of practice settings, an academic career focusing on urethroplasty and male incontinence was the most common.

Conclusions: Our data provide potential applicants with a better understanding of how to optimize their candidacy and what to expect in their early careers.

Keywords: urology, internship and residency, reconstructive surgical procedures, urethral stricture, education

Abbreviations and Acronyms

GURS = Society of Genitourinary Reconstructive Surgeons

Submitted for publication November 8, 2018.

No direct or indirect commercial, personal, academic, political, religious or ethical incentive is associated with publishing this article.

* Correspondence: Department of Urology, The Ohio State University Wexner Medical Center, 915 Olentangy River Rd., Suite 3122, Columbus, Ohio 43212 (telephone: 614-293-8095; FAX: 614-293-3565; *email address*: nima.baradaran@osumc.edu).

2352-0779/19/66-381/0
UROLOGY PRACTICE
https://doi.org/10.1097/UPJ.0000000000000043
Vol. 6, 381-387, November 2019
Published by Wolters Kluwer

Pursuit of fellowship training among graduating urology residents is on the rise and genitourinary trauma and reconstruction has increased in popularity in recent years.[1–3] The match is coordinated by the Society of Genitourinary Reconstructive Surgeons and executed by the AUA (American Urological Association). For the 2018-2019 academic year 44 applicants registered for the GURS match for 17 fellowship positions at 16 institutions in the United States (0.38 positions per applicant).[2] To provide perspective, for FPMRS (Female Pelvic Medicine and Reconstructive Surgery) fellowship in 2017, 74 applicants applied for 64 positions offered across 59 programs (0.86 positions per applicant) and the Society of Urologic Oncology reported unfilled spots, indicating more positions than interested applicants.[4]

The increase in interest is likely multifactorial, and includes major advancements in urethral reconstruction, genital plastic surgery, the emergence of new fields within reconstruction with broad operative scopes such as genitourinary congenitalism and transgender care, and larger institutional emphasis on cancer survivorship programs. There is also a substantial need for the subspecialty. In 2010 among recertifying urologists reconstructive procedures comprised only 1.8% of the total reported number of procedures.[3] In addition, urethroplasty is considered the hallmark of a contemporary reconstructive urology practice as opposed to repeated endoscopic treatments. However, Liu et al reported that the internal urethrotomy/dilation-to-urethroplasty ratio was a staggering 24.5:1 among recertifying urologists in the 2003 to 2013 period.[5] These data imply that reconstructive urologists and their expertise are underrepresented. The fact that 92% of GURS fellowship graduates readily find employment at 1 of their top 3 destinations confirms the market demand.[2]

Fellowship applicants are not solely motivated by a desire for a career in academics or research opportunities, but rather are most often encouraged by a mentor to pursue such training.[6] Despite the high demand and competitive nature of the fellowship, there is limited information on the practice setting of GURS fellowship graduates. In addition, the factors that contribute to a successful match are likely myriad but they have not been studied in a systematic fashion.

The aims of the current study were 1) to identify the factors that fellowship directors deem important and 2) to examine the early career of recent GURS fellowship graduates. We hope that with this information, prospective fellowship applicants will gain a better understanding of the application process and how their future careers might unfold after fellowship.

Methods

We created surveys for GURS fellowship directors and fellows with ad hoc input from the authors. The surveys for graduates and fellowship directors are provided in supplementary Appendix 1 (https://www.urologypracticejournal.com). The surveys were generated using Qualtrics software (Provo, Utah). We e-mailed individualized electronic survey links to all GURS fellowship directors and GURS fellows from 2014 to 2018. A single reminder e-mail was issued to recipients with incomplete surveys. All responses were anonymous. For the fellowship director survey 12 items were rated for their importance in selecting a GURS fellow on a 1 to 5 scale (1—not at all important, 2—slightly important, 3—moderately important, 4—very important and 5—extremely important).

Demographic data on GURS fellows were obtained via online searches between December 2017 and January 2018. Medical school, residency and current practice location were determined using Google® search. Publication data for fellows were gathered from PubMed using the search format "(first and last name[author]) AND ("urology"[MeSH Terms] OR "urology"[All Fields])." Additional searches were conducted to ensure comprehensive collection and cross-referenced on Google Scholar. Publication history was divided into before, during and after fellowship. Because there can be a delay between the initiation and termination of fellowship and the publication of articles, we defined "during fellowship" as December 1 of the first calendar year of fellowship to December 1 of the year after fellowship (eg for 2014-2015, during was defined as December 1, 2014 to December 1, 2016). Work published before this period was defined as pre-fellowship and publications after this period as post-fellowship. In applicable cases the early online publication date was used as the definitive publication date for our categorization purposes. Descriptive statistics were calculated using Excel® 2010.

Results

We electronically contacted 20 GURS fellowship directors and 54 graduates. After 1 reminder email to nonresponders the response rate among fellowship directors and graduates was 90% and 73%, respectively. GURS fellowship directors rated the importance of each selection criterion as shown in table 1 and the figure. The breakdown for each category by importance is illustrated in the supplementary figure (https://www.urologypracticejournal.com). There was a tendency toward rating subjective personal qualities as more important compared to some of the more objective measures and achievements. The 3 top rated characteristics

Table 1.
Applicant characteristics ranked by GURS fellowship directors for selection of fellowship candidates

	Median	IQR	Count
Personality	5	5−5	17
Overall interview performance	5	4−5	18
Letters of recommendation	5	4−5	17
Demonstrated interest in academic career	4	3−5	17
Reputation of urology residency	4	3−4	18
Personal statement	4	2−4	17
High volume of publications + presentations	3	2−4	17
Familiarity with applicant	3	2−4	18
In-service examination scores	3	2−3	18
Reputation of medical school	2.5	2−3	18
MPH, MBA, MS or equivalent	2	1−2.25	16
PhD or equivalent	1	1−2	18

were personality, overall interview performance and letters of recommendation. The bottom 3 were having a PhD or equivalent; MPH, MBA, MS or equivalent; and reputation of medical school (table 1). Eight fellowship directors made additional comments on the selection criteria (https://www.urologypracticejournal.com).

Demographic and practice characteristics of GURS fellowship graduates are reported in table 2. The majority of graduates were trained (92%) and practiced (89%) in the United States; practiced in an academic medical center (44%), multispecialty (13%) or single urology group (13%); have held only 1 position since graduating (89%); were affiliated with Western (31%), Southeastern (19%) or Mid-Atlantic (15%) AUA sections; and were considered the only reconstructive surgeon at their institution (72%).

Graduates were asked about their overall caseload percentage breakdown of reconstructive and nonreconstructive cases. They reported that 40% of their total operative volume was reconstructive (IQR 30%−70%), and of the reconstruction cases the majority were urethroplasty, male incontinence and penile prosthesis (table 3). Of the nonreconstructive cases general and endourology were the most common categories, followed by oncology and female urology. For robotic caseloads the largest contingent performed no robot cases per year (34%), followed by 10 to 20 cases per year (24%), 5 to 10 (10%), less than 5 (17%) and greater than 20 cases per year (14%).

The majority of graduates did not have dedicated research time as part of their employment contract (66%). Of the 10 graduates with dedicated research time most (80%) were for 20% to 50% of their time. The graduates without dedicated time averaged 2 hours per week (IQR 0−5) conducting research. In terms of research productivity graduates from the 2014-2015 fellowship year published a median of 10 articles (IQR 7.5−20.5) (supplementary table, https://www.urologypracticejournal.com). Those from 2015-2016 published 8 (IQR 4.5−15.5), from 2016-2017 published 8.5 (IQR 3−17) and from 2017-2018 published 6 (IQR 3−8).

Table 2.
Practice characteristics of recent fellows graduating the GURS fellowship

Mean age (SD)	35.4 (3.3)	
No. country of fellowship (%):		
U.S.	35	(92)
Canada	2	(5)
Other	1	(3)
India	1	(3)
No. country of practice (%):		
U.S.	34	(89)
Canada	1	(3)
Other	3	(8)
Australia	2	(67)
No. current practice setting (select all that apply) (%):		
Academic medical center	24	(44)
Single urology group	7	(13)
Multispecialty group	7	(13)
Veterans Affairs (VA)	5	(9)
Solo practice	1	(2)
Private hospital	3	(6)
Other public hospital	4	(7)
Community health center/health maintenance organization/managed care organization	1	(2)
Regional community hospital	1	(2)
NonVA military hospital	0	(0)
Other	2	(4)
No. held prior post-fellowship positions (%):	4	(11)
Single urology group	1	(25)
Academic medical center	3	(75)
No. AUA section affiliation (%):*		
Western	8	(31)
Southeastern	5	(19)
Mid-Atlantic	4	(15)
North Central	3	(12)
South Central	2	(8)
New England	2	(8)
New York	1	(4)
Northeastern	1	(4)
No. have been the only reconstructive urologist at practice (%)†	21	(72)

Overall sample size 38.
* Sample size 26.
† Sample size 29.

Discussion

The findings of our survey based study confirmed that fellowship directors prioritize personal characteristics and recommendations by peers in selecting fellows. In contrast, advanced degrees and reputation of medical school had little to do with their selection. In addition, among GURS fellowship graduates there was a tendency toward an academic career focusing on urethroplasty and male incontinence. There was also a positive trend toward research productivity during fellowship, although most graduates produced fewer peer reviewed publications after graduation.

Table 3.
Surgical caseload percentage breakdown per year among recent GURS fellowship graduates

	Median % (IQR)
Total reconstructive:	40 (30–70)
Urethroplasty	34 (25–48)
Penile prosthesis	10 (5–20)
Artificial urinary sphincter/male sling	16 (5–21)
External genital reconstruction (including Peyronie's)	9 (5–15)
Upper tract/ureter reconstruction	5 (0–12)
Bladder reconstruction	2 (0–9)
Trauma	4 (0–10)
Rectourethral fistula	0 (0–1)
Congenitalism	0 (0–5)
Transgender	0 (0–0)
General (including benign prostatic hyperplasia etc)	39 (25–62)
Endourology	27 (21–40)
Oncology	10 (0–20)
Female (any, including urethroplasty)	5 (0–22)

Sample size 29.

In a study surveying orthopedic fellowship program directors in the U.S. the most important criteria in deciding to offer an interview were letters of recommendation from subspecialty faculty, quality of residency program and letter from the program director.[7] In line with the findings of our study advanced degree, extracurricular activities and quality of medical school were less important. Similar to our findings ophthalmic plastic and reconstructive surgery and pediatric emergency medicine program directors highly valued interview performance, ability to work/communicate with others and letters of recommendation from subspecialty faculty when ranking a fellow.[8–10] These observations emphasize the importance of the subjective evaluation of fellowship applicants in the selection process.[11,12] Similar to urology residency match, fellowship applicants should establish and foster relationships with leaders in the field early in their training as personal relationship is a strong driver for fellow ranking among program directors.[12] Freilich et al reported that residents who were encouraged by a mentor in the field, rather than by a program director or chairperson, were significantly more likely to pursue fellowship.[6] They also identified shorter residency and publication during residency as independent predictors of pursuing fellowship. These results further highlight the value of mentorship from

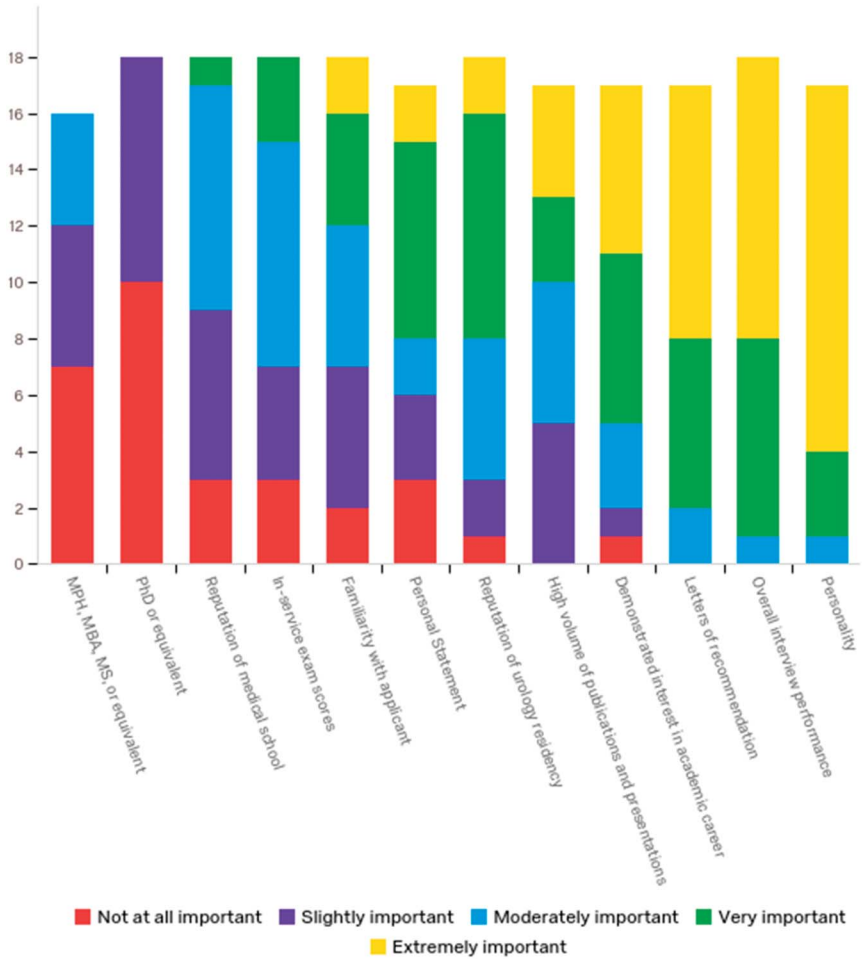

Figure. GURS fellowship director ratings of factors involved in fellowship selection. Application characteristics were rated on 1-5 Likert scale. Factors are arranged from least desirable on left to most desirable on right.

resident and fellowship director perspectives in cultivating fellowship interest. Given the high financial cost to attend interviews and accept a year of reduced salary, close relationships and mentoring are pivotal to sustaining pursuit of a fellowship.[13,14] This point is particularly important for applicants at programs without a dedicated reconstructive urologist. It seems prudent for these applicants to seek opportunities at other institutions in order to build relationships in the subspecialty. Several academic reconstructive surgeons participate in international outreach programs such as IVUmed that can be a good avenue for prospective applicants to gain exposure to the field and build connections. GURS also sponsors 1 to 2-day visiting professorships to institutions that lack a GURS member or a specialist in reconstructive urology in order to increase exposure and encourage interest. Similar programs in other societies such as the Society of Urodynamics, Female Pelvic Medicine and Urogenital Reconstruction are well received by the participants.

Research productivity was considered of average importance for choosing fellows. While fellows typically publish 3 to 4 articles during fellowship, we found that this productivity was not maintained during the early career period. It remains unclear whether fellowship training ultimately results in a more productive research career given our limited years of data, but others have noted no difference between academic urologists who were fellowship trained and those who were not.[15,16] For graduates seeking academic positions scholarly work has been shown to be associated with career advancement.[17] Given that 44% of graduating fellows worked at an academic center, cultivating stronger foundations in research during fellowship may prove beneficial for academic practitioners. A potential explanation for lower scholarly productivity may be that a majority of recent graduates did not have dedicated research time protected in their contracts. It is important to note that there is no dedicated research time in the official curriculum of the GURS fellowships, although in some programs arrangements can be made for extra months of scholarly activity on an individual basis.

There is large variability among GURS fellowships with varying emphasis on bladder reconstruction, urinary diversion, female urology, genital reconstruction, genitourinary trauma, upper tract reconstruction and robotic surgery. This diversity in practice exists among graduates as well. The most consistent procedures among all GURS fellowships are urethroplasty and male incontinence.[2] Further research might explore whether the focus of training during fellowship correlates with the case patterns of recent graduates. Our findings revealed that early career graduates are performing 40% reconstructive cases in addition to benign prostatic hyperplasia, endourologic or oncologic care. This finding mirrors prior work that suggested endoscopic surgery accounted for 40% of early career caseload, followed by 36% reconstructive cases, including urethroplasty, bladder reconstruction or incontinence procedures.[18] As such, graduating fellows should expect some variety in caseload in their initial career. Despite the relatively scarce job market in academic urology compared to large multispecialty or single urology groups, our data show that most graduates stay in academia. Saavedra and Rourke have shown that all GURS fellowship graduates readily find employment within 6 months, with 88% before fellowship completion, and that 92% are satisfied with their career and report confidence in their ability to have a career in reconstruction.[2] As a medical society we should focus on whether expansion of the field of trauma and male reconstruction and the increase in the number of graduates have objectively improved men's health. Furthermore, it is not known if there is a saturation point for the number of GURS trained specialists to address the need for such services in the country.

This work shares the limitations of other survey related research. While we had a strong response rate for our survey from fellowship directors and graduates, new fellowship positions have opened up in the interim for 2018-2019. Therefore, our results may not reflect the opinions of all current fellowship directors nor reflect the careers of all recent fellowship graduates. Our survey was not exhaustive, and while we gave fellowship directors a prompt to fill in their own response, we may have overlooked pertinent factors for fellowship selection. Given that this survey was not validated we do not know if various prompts were interpreted as intended or would be reproducible. Our search for peer reviewed research was not exhaustive and was limited to PubMed. Given the varied time for paper submission and acceptance we may have mischaracterized or missed research that was pursued during fellowship. Several fellows also participate in nonpeer reviewed scholarly activities such as book chapter preparation, conference participation or hospital level guideline/policy creation that, despite their tremendous value, are not captured as research productivity in our study. In addition, GURS has an international footprint with several international fellowships open to U.S. trained urologists. We limited our survey to U.S. based fellowships and more inclusive research in the future could identify important nuances in training and practice patterns that can advance the field of reconstruction on a global level.

Conclusion

Fellowship directors rated personal characteristics and recommendations by peers as most important in selecting

fellows. Recent fellowship graduates tended to pursue academic careers with a mixed caseload heavy on reconstruction. This information provides potential applicants with a better understanding of how to optimize their candidacy and what to expect in their early careers.

Author Declaration

The corresponding author certifies that, when applicable, a statement(s) has been included in the manuscript documenting institutional review board, ethics committee or ethical review board study approval; principles of Helsinki Declaration were followed in lieu of formal ethics committee approval; institutional animal care and use committee approval; all human subjects provided written informed consent with guarantees of confidentiality; IRB approved protocol number; animal approved project number.

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Editorial Commentary

The data, obviously subjective by nature, provide an opportunity to see whether the goals of the AUA steering committee in 2011 were achieved (reference 3 in article).

1. Credentialing: Unlike the FPMRS fellowship, which is ACGME (Accreditation Council for Graduate Medical Education) based with subspecialty board certification, the GURS fellowship remains a society based clinical fellowship.

2. Structure and content: Fellows largely from North America are able to bill for urological services outside of the area of their reconstruction fellowship, in contrast to ACGME approved fellows, who are prohibited from billing altogether. Although these programs do teach and perform clinical research, there is typically no defined research experience mandated during the fellowships. The recommended modular constructs of the various aspects of male reconstruction were never formalized. The most common male health issue (benign prostate care) has not been the purview of this fellowship despite being the leading procedure (39%) and higher than urethroplasty (24%) in practice after fellowship.

3. Quality of training: Since there is no certification at the end of the fellowship, the surrogate is the output of fellows in academic pursuit and publications. Not unexpectedly there is virtually no basic research and publications are limited to those during training, before and during fellowship, despite 44% being at academic centers. The society mission statement from this survey has succeeded in providing improved access to care but not much else.[1] Standardizing core content would be a good step forward and considering new aspects of transgender surgery, tissue engineering and penile transplantation would help.

4. The survey did not cover key issues such as workforce supply and training capacity nor future projections of need. Despite personal qualities being the strongest attributes in picking a fellow and GURS training directors in general doing a fantastic job in leading teams to LMIC (low to middle income countries) for reconstructive surgeries, few opportunities exist for prospective fellows from LMIC to train and return to the countries in desperate need of these talents.

Gopal H. Badlani
Department of Urology
Wake Forest University
Winston-Salem, North Carolina

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